

REMARKS

Currently, claims 1-20 are pending for consideration. These claims have been rejected on various grounds based on U.S. Patent No. 6,283,840 to Huey (the Huey reference).

Reconsideration of the present application in view of the following comments is hereby requested.

Claims 1, 2, 4, 5, 7, 8-10, 13, and 16-19 were rejected under 35 U.S.C. §102(e) as being anticipated by the Huey reference. The Applicants respectfully traverse. As an initial matter, it is noted that the Huey reference is of a type that can be overcome by the procedures of 35 U.S.C. §1.131, and the right to do so is reserved. Even assuming arguendo that the reference is properly applied, there are several reasons that the rejection based on the Huey reference should be withdrawn as follows.

The Huey reference is directed to a chemical mechanical polishing apparatus 10 that includes three independently-operated polishing stations 14, a substrate transfer station 16, and a rotatable carousel which controls the operation of four independently rotatable carrier heads 20. These carrier heads 20 are each configured to hold substrate 5 in selective contact with one of polishing pads 54. Polishing pads 54 are each mounted on a rotatable platen 52. Associated with each polishing pad 54 is a pad conditioner 56 and a cleaning arm assembly 60. Apparently, substrate 5 is attached to one of carrier heads 20, and is moved onto and off of a given polishing pad 54. Notably, there is no teaching or discussion as to whether any type of cleaning operation of any pad 54 is performed while substrate 5 is in contact with or otherwise disposed near polishing pad 54.

In order to establish anticipation, each and every element and limitation of the subject

claim must be disclosed in a single reference. Among the undisclosed features of claim 1 are spraying a high pressure fluid to remove slurry from between the wafer substrate and the pad (emphasis added). In other words, slurry is removed while the wafer substrate is engaged with the pad. The Huey reference is silent as to cleaning with assembly 60 while the wafer substrate is present -- failing to disclose the invention of claim 1.

While this silence is enough to establish an improper anticipation rejection, passages in the Huey reference go further by suggesting the absence of the wafer substrate during cleaning. For example, after polishing has been completed, the arm assembly 60 is lifted and the remaining slurry is centrifugally expelled (step 106) before lowering the arm back into contact with the polishing pad (step 108). (Huey, column 5, lines 36-40). Such an operation would not likely provide desired results if the wafer substrate is still present. Furthermore, the Huey reference notes that once the cleaning operation is completed, the arm assembly 60 is lifted away from the polishing pad so that waste water inside the housing can be centrifugally expelled from the rotating polishing pad 54 (step 112) -- noting that it is "important for such fluids and materials to be removed from the pad to ensure that the pad is free of contaminants prior to polishing a substrate." (Huey, column 5, lines 55-61). Given the importance noted by Huey, why would the wafer substrate still be present -- being at risk of damage from Huey's perspective. Accordingly, the reference fails to explicitly or inherently teach features of claim 1 and therefore should be withdrawn.

Besides the patentability of claim 1, further reasons support the patentability of rejected dependent claims. For example, claim 4 further recites rotating the pad at a high speed during the spraying step. In contrast, retainer 78 of the Huey device is lowered to contact polishing pad

54 such that it “forms a dam to retain slurry and rinse water within a reservoir formed by the retainer and pad.” (Huey, column 4, lines 41-43). Rotating pad 54 while retainer 78 is lowered to form this dam seems contrary to the desired operation of apparatus 10. Indeed, there is no such teaching contained in the Huey reference. In another example, claim 5 recites a speed range for the rotation of the pad in claim 4 which is also not disclosed, taught, or suggested. Thus, numerous reasons support rejected dependent claims corresponding to claim 1.

Independent claim 9 also includes several features not disclosed, taught, or suggested by the Huey reference. For example, claim 9’s features include spraying a high pressure fluid around said wafer substrate to remove slurry from between said substrate and said pad (emphasis added). There is no disclosure, teaching, or suggestion in the Huey reference that the wafer substrate is present in such a manner that high pressure fluid would be sprayed around it to remove slurry from between it and the pad. Claim 9 further includes rotating the pad at a second speed during the spraying step that is different than a first speed (emphasis added). Rotation of Huey’s pad 54 at any speed during spraying is not disclosed -- let alone the different speed features recited in claim 9. Moreover, Huey’s use of retainer 78 to form a dam during cleaning further points away from rotation during spraying. Thus, it is respectfully submitted that claim 9 is not anticipated.

Besides the patentability of claim 9, there are further reasons supporting the patentability of rejected dependent claims. For example, claims 11 and 12 recite different speed ranges for the second speed that are not disclosed, taught, or suggested by the Huey reference. Thus, further reasons support patentability of rejected dependent claims corresponding to claim 9.

As to independent claim 13, its features include rotation of a platen at a first speed during

a first time, and at a second speed during a second time. There is no disclosure, teaching, or suggestion of such features in the Huey reference.

As in the case of the other rejected dependent claims, further reasons support the patentability of claims depending from claims 13 as well. For example, claims 14 and 15 both recite speed ranges and/or parameters that are not disclosed, taught, or suggested in the Huey reference.

Although only asserted against dependent claims, a rejection under 35 U.S.C. §103 was also stated based on the Huey reference. In this rejection, it was reasoned that it:

“is inherent that the pad must rotate faster during this step [referring to column 5, lines 55-59 in which water is centrifugally expelled from housing 64 by rotating pad 54] than during polishing. If the pad rotates during the polishing step at the same rate as the expelling step, the slurry and other liquids would not remain on the pad for the time required to polish the wafer.” (Office Action page 3, item 5).

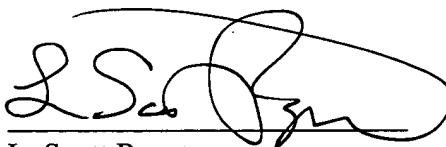
For an element to be inherently disclosed, it must “necessarily be present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.” In re Robertson, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citing Continental Can Co. v. Monsanto Co., 948 F2d 1264, 1268 (Fed. Cir. 1991)). Indeed, inherency “may not be established by probabilities or possibilities . . . The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” 49 USPQ2d at 1951. “In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art.” Ex parte Levy, 17 USPQ2d 1461, 464 (USPTO Bd. of Pat. App. and

Interferences 1990) (emphasis in the original).

The speed relationship asserted in the Office Action does not necessarily flow from its teachings. Indeed, a difference in the viscosity and/or other properties of the slurry versus the cleaning fluid and resulting materials could differ in such a manner that a faster speed to centrifugally expel the cleaning fluid/material does not necessarily flow from the teachings of the Huey reference -- therefore failing to meet the requirements of inherency. Moreover, because the first speed and second speed occur when dispensing the slurry and dispensing the high pressure fluid, respectively (corresponding to the first time and the second time), a higher speed during centrifugal expulsion of the materials still lacks any teaching as to speed relationships during dispensing. Thus, there are numerous grounds distinguishing the claims from the disclosure and teachings of the Huey reference.

In view of the foregoing, it is respectfully submitted that claims 1-20 are in condition for allowance. Reconsideration of the present application is respectfully requested.

Respectfully submitted:

A handwritten signature in black ink, appearing to read "L. Scott Paynter", written over a horizontal line.

L. Scott Paynter
Reg. No. 39,797
Woodard, Emhardt, Moriarty,
McNett & Henry
Bank One Center Tower
111 Monument Circle, Suite 3700
Indianapolis, Indiana 46204-5137
(317) 634-3456